Extension Service
West Virginia University.

Disaster and Emergency Management Resources

Dirty Bombs

Dirty Bomb

- A dirty bomb, or radiological dispersion device, is a bomb that combines conventional explosives such as dynamite with radioactive materials in the form of powder or pellets. The idea behind a dirty bomb is to blast radioactive material into the area around the explosion. This could possibly cause buildings and people to be exposed to radioactive material. The main purpose of a dirty bomb is to frighten people and make buildings or land unusable for a long period of time.

Sources of the Radioactive Material

- There has been much speculation about where terrorists could get radioactive material to place in a dirty bomb. The most harmful radioactive materials are found in nuclear power plants and nuclear weapons sites. However, increased security at these facilities makes obtaining materials from them more difficult.

- Because of the dangerous and difficult aspects of obtaining high-level radioactive materials from a nuclear facility, there is a greater chance that the radioactive materials used in a dirty bomb would come from low-level radioactive sources. Low-level radioactive sources are found in hospitals, on construction sites, and at food irradiation plants. The sources in these areas are used to diagnose and treat illnesses, sterilize equipment, inspect welding seams, and irradiate food to kill harmful microbes.

Dangers of a Dirty Bomb

- If low-level radioactive sources were to be used, the primary danger from a dirty bomb would be the blast itself. Gauging how much radiation might be present is difficult when the source of the radiation is unknown. However, **at the levels created by most probable sources, not enough radiation would be present in a dirty bomb to cause severe illness from exposure to radiation.**

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What to Do Following an Explosion

Radiation cannot be seen, smelled, felt, or tasted by humans. Therefore, if people are present at the scene of an explosion, they will not know whether radioactive materials were involved at the time of the explosion. Unless you are severely injured:

- Leave the immediate area on foot. Do not panic. Do not take public or private transportation such as buses, subways, or cars because if radioactive materials were involved, they may contaminate cars or the public transportation system.
- Go inside the nearest building. Staying inside will reduce exposure to any radioactive material that may be on dust at the scene.
- Remove clothing as soon as possible, place clothes in a plastic bag, and seal it. Removing clothing will remove most of the contamination caused by external exposure to radioactive materials. Saving the contaminated clothing would allow testing for exposure without invasive sampling.
- Take a shower or wash as best as possible. Washing will reduce the amount of radioactive contamination on the body and will effectively reduce total exposure.
- Be on the lookout for information. Once emergency personnel can assess the scene and the damage, they will be able to tell people whether radiation was involved.

Even if people do not know whether radioactive materials were present, following these simple steps can help reduce their injury from other chemicals that might have been present in the blast.

If Radioactive Materials Were Involved

Keep televisions or radios tuned to local news networks. If a radioactive material was released, people will be told where to report for radiation monitoring and blood tests to determine whether they were exposed to the radiation as well as what steps to take to protect their health.

Condensed from a paper developed by the Centers for Disease Control and Prevention entitled "Dirty Bombs"